

#3



1

SEQUENCE LISTING

<110> PEDERSEN, ANDERS H.
ANDERSON, KIM V.
BORNAES, CLAUS

<120> FACTOR VII OR VIIA-LIKE MOLECULES

<130> 31-001100US

<140> 09/782,587
<141> 2001-02-12

<150> PA 2000 00218
<151> 2000-02-11

<150> 60/184,036
<151> 2000-02-22

<150> 60/241,916
<151> 2000-10-18

<160> 19

<170> PatentIn Ver. 2.1

<210> 1
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<213> Homo sapiens

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<222> (6)..(7)
<223> Gamma carboxyglutamic acid or glutamic acid

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Cys	Lys	Xaa	Xaa	Gln	Cys	Ser	Phe	Xaa	Xaa	Ala	Arg	Xaa	Ile	Phe	Lys
								20	25						30

Asp	Ala	Xaa	Arg	Thr	Lys	Leu	Phe	Trp	Ile	Ser	Tyr	Ser	Asp	Gly	Asp
								35	40						45

Gln	Cys	Ala	Ser	Ser	Pro	Cys	Gln	Asn	Gly	Gly	Ser	Cys	Lys	Asp	Gln
								50	55						60

Leu	Gln	Ser	Tyr	Ile	Cys	Phe	Cys	Leu	Pro	Ala	Phe	Glu	Gly	Arg	Asn
								65	70			75			80

Cys	Glu	Thr	His	Lys	Asp	Asp	Gln	Leu	Ile	Cys	Val	Asn	Glu	Asn	Gly
								85		90					95

Gly	Cys	Glu	Gln	Tyr	Cys	Ser	Asp	His	Thr	Gly	Thr	Lys	Arg	Ser	Cys
								100	105						110

Arg	Cys	His	Glu	Gly	Tyr	Ser	Leu	Leu	Ala	Asp	Gly	Val	Ser	Cys	Thr
								115	120			125			

Pro	Thr	Val	Glu	Tyr	Pro	Cys	Gly	Lys	Ile	Pro	Ile	Leu	Glu	Lys	Arg
								130	135			140			

Asn	Ala	Ser	Lys	Pro	Gln	Gly	Arg	Ile	Val	Gly	Gly	Lys	Val	Cys	Pro
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Lys	Gly	Glu	Cys	Pro	Trp	Gln	Val	Leu	Leu	Leu	Val	Asn	Gly	Ala	Gln
								165	170			175			

Leu	Cys	Gly	Gly	Thr	Leu	Ile	Asn	Thr	Ile	Trp	Val	Val	Ser	Ala	Ala
								180	185			190			

His	Cys	Phe	Asp	Lys	Ile	Lys	Asn	Trp	Arg	Asn	Leu	Ile	Ala	Val	Leu
								195	200			205			

Gly	Glu	His	Asp	Leu	Ser	Glu	His	Asp	Gly	Asp	Glu	Gln	Ser	Arg	Arg
								210	215			220			

Val	Ala	Gln	Val	Ile	Ile	Pro	Ser	Thr	Tyr	Val	Pro	Gly	Thr	Thr	Asn
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His	Asp	Ile	Ala	Leu	Leu	Arg	Leu	His	Gln	Pro	Val	Val	Leu	Thr	Asp
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His	Val	Val	Pro	Leu	Cys	Leu	Pro	Glu	Arg	Thr	Phe	Ser	Glu	Arg	Thr
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Leu	Ala	Phe	Val	Arg	Phe	Ser	Leu	Val	Ser	Gly	Trp	Gly	Gln	Leu	Leu
								275	280			285			

Asp Arg Gly Ala Thr Ala Leu Glu Leu Met Val Leu Asn Val Pro Arg
 290 295 300

Leu Met Thr Gln Asp Cys Leu Gln Gln Ser Arg Lys Val Gly Asp Ser
 305 310 315 320

Pro Asn Ile Thr Glu Tyr Met Phe Cys Ala Gly Tyr Ser Asp Gly Ser
 325 330 335

Lys Asp Ser Cys Lys Gly Asp Ser Gly Gly Pro His Ala Thr His Tyr
 340 345 350

Arg Gly Thr Trp Tyr Leu Thr Gly Ile Val Ser Trp Gly Gln Gly Cys
 355 360 365

Ala Thr Val Gly His Phe Gly Val Tyr Thr Arg Val Ser Gln Tyr Ile
 370 375 380

Glu Trp Leu Gln Lys Leu Met Arg Ser Glu Pro Arg Pro Gly Val Leu
 385 390 395 400

Leu Arg Ala Pro Phe Pro
 405

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<212> DNA

<213> Homo sapiens

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 Ala
 1

aat gcc ttt ctg gaa gag ctc cgc cct ggc tcc ctg gaa cgc gaa tgc 165
 Asn Ala Phe Leu Glu Leu Arg Pro Gly Ser Leu Glu Arg Glu Cys
 5 10 15

aaa gag gaa cag tgc agc ttt gag gaa gcc cgg gag att ttc aaa gac 213
 Lys Glu Glu Gln Cys Ser Phe Glu Glu Ala Arg Glu Ile Phe Lys Asp
 20 25 30

gct gag cgg acc aaa ctg ttt tgg att agc tat agc gat ggc gat cag 261
 Ala Glu Arg Thr Lys Leu Phe Trp Ile Ser Tyr Ser Asp Gly Asp Gln
 35 40 45

tgc gcc tcc agc cct tgc cag aac ggg ggc tcc tgc aaa gac cag ctg 309
 Cys Ala Ser Ser Pro Cys Gln Asn Gly Gly Ser Cys Lys Asp Gln Leu
 50 55 60 65

cag agc tat atc tgc ttc tgc ctg cct gcc ttt gag ggg cgc aat tgc Gln Ser Tyr Ile Cys Phe Cys Leu Pro Ala Phe Glu Gly Arg Asn Cys	70	75	80	357
gaa acc cat aag gat gac cag ctg att tgc gtc aac gaa aac ggg ggc Glu Thr His Lys Asp Asp Gln Leu Ile Cys Val Asn Glu Asn Gly Gly	85	90	95	405
tgc gag cag tac tgc agc gat cac acg ggc acg aag cgg agc tgc cgc Cys Glu Gln Tyr Cys Ser Asp His Thr Gly Thr Lys Arg Ser Cys Arg	100	105	110	453
tgc cac gaa ggc tat agc ctc ctg gct gac ggg gtg tcc tgc acg ccc Cys His Glu Gly Tyr Ser Leu Leu Ala Asp Gly Val Ser Cys Thr Pro	115	120	125	501
acg gtg gaa tac cct tgc ggg aag att ccc att cta gaa aag cgg aac Thr Val Glu Tyr Pro Cys Gly Lys Ile Pro Ile Leu Glu Lys Arg Asn	130	135	140	549
145				
gct agc aaa ccc cag ggc cggtc gtc ggc ggg aag gtc tgc cct aag Ala Ser Lys Pro Gln Gly Arg Ile Val Gly Gly Lys Val Cys Pro Lys	150	155	160	597
165				
ggg gag tgc ccc tgg cag gtc ctg ctc ctg gtc aac ggg gcc cag ctg Gly Glu Cys Pro Trp Gln Val Leu Leu Leu Val Asn Gly Ala Gln Leu	170	175		645
175				
tgc ggc ggg acc ctc atc aat acc att tgg gtc gtg tcc gcc gct cac Cys Gly Gly Thr Leu Ile Asn Thr Ile Trp Val Val Ser Ala Ala His	180	185	190	693
195				
tgc ttc gat aag att aag aat tgg cgg aac ctc atc gct gtg ctc ggc Cys Phe Asp Lys Ile Lys Asn Trp Arg Asn Leu Ile Ala Val Leu Gly	200	205		741
205				
gaa cac gat ctg tcc gag cat gac ggg gac gaa cag tcc cgc cgg gtg Glu His Asp Leu Ser Glu His Asp Gly Asp Glu Gln Ser Arg Arg Val	210	215	220	789
225				
gct cag gtc atc att ccc tcc acc tat gtg cct ggc acg acc aat cac Ala Gln Val Ile Ile Pro Ser Thr Tyr Val Pro Gly Thr Thr Asn His	230	235	240	837
240				
gat atc gct ctg ctc cgc ctc cac cag ccc gtc gtg ctc acc gat cac Asp Ile Ala Leu Leu Arg Leu His Gln Pro Val Val Leu Thr Asp His	245	250	255	885
255				
gtc gtg cct ctg tgc ctg cct gag cgg acc ttt agc gaa cgc acg ctg Val Val Pro Leu Cys Leu Pro Glu Arg Thr Phe Ser Glu Arg Thr Leu	260	265	270	933
270				
gct ttc gtc cgc ttt agc ctc gtg tcc ggc tgg ggc cag ctg ctc gac Ala Phe Val Arg Phe Ser Leu Val Ser Gly Trp Gly Gln Leu Leu Asp	275	280	285	981
285				

cg ^g gg ^c g ^c t acc g ^c t ctc gag ctg atg gtg ctc aac g ^c t ccc cg ^g ctg Arg Gly Ala Thr Ala Leu Glu Leu Met Val Leu Asn Val Pro Arg Leu	1029
290 295 300 305	
atg acc cag gac tgc ctg cag cag tcc cgc aaa gtg ggg gac tcc ccc Met Thr Gln Asp Cys Leu Gln Ser Arg Lys Val Gly Asp Ser Pro	1077
310 315 320	
aat atc acg gag tat atg ttt tgc gct ggc tat agc gat ggc tcc aag Asn Ile Thr Glu Tyr Met Phe Cys Ala Gly Tyr Ser Asp Gly Ser Lys	1125
325 330 335	
gat agc tgc aag ggg gac tcc ggc ggg ccc cat gcc acg cac tat cgc Asp Ser Cys Lys Gly Asp Ser Gly Gly Pro His Ala Thr His Tyr Arg	1173
340 345 350	
ggg acc tgg tac ctc acc ggg atc gtc agc tgg ggc cag ggc tgc gcc Gly Thr Trp Tyr Leu Thr Gly Ile Val Ser Trp Gly Gln Gly Cys Ala	1221
355 360 365	
acg gtg ggg cac ttt ggc gtc tac acg cgc gtc agc cag tac att gag Thr Val Gly His Phe Gly Val Tyr Thr Arg Val Ser Gln Tyr Ile Glu	1269
370 375 380 385	
tgg ctg cag aag ctc atg cgg agc gaa ccc cgg ccc ggg gtg ctc ctg Trp Leu Gln Lys Leu Met Arg Ser Glu Pro Arg Pro Gly Val Leu Leu	1317
390 395 400	
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<210> 3

<211> 406

<212> PRT

<213> Homo sapiens

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Ala Asn Ala Phe Leu Glu Glu Leu Arg Pro Gly Ser Leu Glu Arg Glu
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35 40 45Gln Cys Ala Ser Ser Pro Cys Gln Asn Gly Gly Ser Cys Lys Asp Gln
50 55 60Leu Gln Ser Tyr Ile Cys Phe Cys Leu Pro Ala Phe Glu Gly Arg Asn
65 70 75 80Cys Glu Thr His Lys Asp Asp Gln Leu Ile Cys Val Asn Glu Asn Gly
85 90 95

Gly Cys Glu Gln Tyr Cys Ser Asp His Thr Gly Thr Lys Arg Ser Cys
 100 105 110

 Arg Cys His Glu Gly Tyr Ser Leu Leu Ala Asp Gly Val Ser Cys Thr
 115 120 125

 Pro Thr Val Glu Tyr Pro Cys Gly Lys Ile Pro Ile Leu Glu Lys Arg
 130 135 140

 Asn Ala Ser Lys Pro Gln Gly Arg Ile Val Gly Gly Lys Val Cys Pro
 145 150 155 160

 Lys Gly Glu Cys Pro Trp Gln Val Leu Leu Val Asn Gly Ala Gln
 165 170 175

 Leu Cys Gly Gly Thr Leu Ile Asn Thr Ile Trp Val Val Ser Ala Ala
 180 185 190

 His Cys Phe Asp Lys Ile Lys Asn Trp Arg Asn Leu Ile Ala Val Leu
 195 200 205

 Gly Glu His Asp Leu Ser Glu His Asp Gly Asp Glu Gln Ser Arg Arg
 210 215 220

 Val Ala Gln Val Ile Ile Pro Ser Thr Tyr Val Pro Gly Thr Thr Asn
 225 230 235 240

 His Asp Ile Ala Leu Leu Arg Leu His Gln Pro Val Val Leu Thr Asp
 245 250 255

 His Val Val Pro Leu Cys Leu Pro Glu Arg Thr Phe Ser Glu Arg Thr
 260 265 270

 Leu Ala Phe Val Arg Phe Ser Leu Val Ser Gly Trp Gly Gln Leu Leu
 275 280 285

 Asp Arg Gly Ala Thr Ala Leu Glu Leu Met Val Leu Asn Val Pro Arg
 290 295 300

 Leu Met Thr Gln Asp Cys Leu Gln Gln Ser Arg Lys Val Gly Asp Ser
 305 310 315 320

 Pro Asn Ile Thr Glu Tyr Met Phe Cys Ala Gly Tyr Ser Asp Gly Ser
 325 330 335

 Lys Asp Ser Cys Lys Gly Asp Ser Gly Gly Pro His Ala Thr His Tyr
 340 345 350

 Arg Gly Thr Trp Tyr Leu Thr Gly Ile Val Ser Trp Gly Gln Gly Cys
 355 360 365

 Ala Thr Val Gly His Phe Gly Val Tyr Thr Arg Val Ser Gln Tyr Ile
 370 375 380

 Glu Trp Leu Gln Lys Leu Met Arg Ser Glu Pro Arg Pro Gly Val Leu
 385 390 395 400

Leu Arg Ala Pro Phe Pro
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<210> 4
<211> 1357
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Expression
      cassette for expression of FVII in mammalian cells

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gcccggcc aatgccttc tggaaagagct cccgcctggc tcccttggaa gcaatgcaa 180
agaggaacag tgcagctttg aggaagcccg ggagattttc aaagacgctg agcggaccaa 240
actgttttg attagctata gcgttggcga tcagtgcggcc tccagccctt gccagaacgg 300
gggctcctgc aaagaccaggc tgcagagcta tatctgcctt tgcctgcctg ccttgaggg 360
gcgcaatgc gaaacccata aggatgacca gctgatttgc gtcaacgaaa acggggctg 420
cgagcagtagc tgcagcgtac acacgggcac gaagcggagc tgcgtgtcc acgaaggcta 480
tagcctcctg gctgacgggg tgcctgcac gcccacgggt gaataccctt gcgggaagat 540
tcccattcta gaaaagcgga acgctagcaa accccaggc cgatcgctg gcgggaaggt 600
ctgcccataag gggagtgcc cctggcaggt cctgctcctg gtcaacgggg cccagctgtg 660
cgccgggacc ctcatcaata ccattttgggt cgtgtccggc gtcactgtc tcgataagat 720
taagaattgg cggAACCTCA tcgctgtgct cggcgaacac gatctgtccg agcatgacgg 780
ggacgaacag tcccgccggg tggctcaggt catcattccc tccacctatg tgcctggcac 840
gaccaatcac gatatcgctc tgctccgcct ccaccagccc gtcgtgtca ccgatcacgt 900
cgtgcctctg tgctgcctg agcggacatt tagcgaacgc acgctggctt tcgtccgcctt 960
tagcctcggt tccggctggg gccagctgtc cgaccggggc gctaccgctc tcgagctgtat 1020
ggtgctcaac gtccccggc tgatgacca ggactgcctg cagcagtccc gcaaagtggg 1080
ggactccccca aatatcacgg agtataatgtt ttgcgtggc tatagcgatg gctccaagga 1140
tagctgcaag gggactccg gccccccca tgccacgcac tatcgccggg cctggtaacct 1200
caccgggatc gtcagctggg gccaggctg cgccacgggt gggcactttg gctctacac 1260
gcgcgtcagc cagtagattt gatggctgca gaagctcatg cggagcgaac cccggccgg 1320
ggtgctcctg cggcccccatt tcccttgata aaagctt 1357

<210> 5
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer
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<400> 5
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<210> 6
<211> 31
<212> DNA
<213> Artificial Sequence

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<223> Description of Artificial Sequence: Primer
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<210> 7
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer
      CBProFpr216

<400> 7
cttaaggatc ccgccaccat ggtcagccag          30

<210> 8
<211> 28
<212> DNA
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<220>
<223> Description of Artificial Sequence: Primer
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<400> 8
ggagtccccg gtttggttgg actgctgc          28

<210> 9
<211> 21
<212> DNA
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<220>
<223> Description of Artificial Sequence: Primer
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<400> 9
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<210> 10
<211> 28
<212> DNA
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<220>
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<210> 11
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
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CBProFpr226

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cattctagaa aaccggacct ctagcaaacc 30

<210> 12
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<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide tag

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His His His His His His
1 5

<210> 13
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide tag

<400> 13
Met Lys His His His His His His
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<210> 14
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
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1 5 10

<210> 15
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<212> PRT
<213> Artificial Sequence

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    1          5          10

<210> 16
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<212> PRT
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Met Lys His Gln His Gln His Gln His Gln His Gln Gln
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<212> PRT
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<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide tag

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Asp Tyr Lys Asp Asp Asp Asp Lys
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<210> 19
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide tag
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Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
1 5